for a maximum illumination condition, and a maximum value kernel size based on a minimum illumination condition.

REMARKS

Reconsideration and allowance of the above-referenced application are respectfully requested.

Claims 1-20 stand rejected under judicially-created obviousness-type double patenting. In response, a terminal disclaimer is filed herewith to obviate the rejection.

Claims 1 and 2 stand rejected under 35 USC 102(b) as allegedly being anticipated by Wilder. Claim 2 has been amended into independent form, and claim 1 is canceled. However, the rejection of claim 2 based on Wilder is respectfully traversed.

Admittedly, Wilder teaches a multiple resolution image sensor. Wilder's basic teaching, however, is that this signal can be merged into super pixel signals based on a control of some unspecified type from the processor. The rejection indicates that the processor 18 forms the resolution control circuit. However, nowhere does Wilder teach or suggest that this processor operates in the specific way defined by amended claim 2.

Claim 2 requires that the resolution control circuit monitors a magnitude of a received signal and changes the kernel size based on the signals from the pixels. The amended claim 2

has been amended to emphasize that this change of size is an automatic change of size. Nowhere is this taught or suggested by the Wilder reference. Rather, the Wilder reference simply suggests that the processor produces "supervisory signals" that control the decoder circuits (see for example, column 14, lines 54-56, line 67). Therefore, it is respectfully suggested that amended claim 2 should be in condition for allowance.

The dependent claims which depend from amended claim 2 should be allowable for similar reasons. The rejection rejects these claims based on Wilder in view of U.S. Patent No. 5,717,199 to Carbone. This contention is further respectfully traversed. While admittedly the '199 patent teaches a charge injection device, it does not teach or suggest the claimed subject matter of the dependent claims.

The rejection states, regarding claim 3, that '199 suggests combining pixels during times of low light conditions. While this is true, and well known in the art, it is not in any way taught or suggested to be automatically controlled, as claimed. Claim 3 specifies that the resolution control circuit automatically increases and decreases kernel size. This is not taught or suggested by the prior art.

Claim 5 specifies that the elimination condition is judged from the output of the active pixel sensor. This adaptive

control is further not taught or suggested by the cited prior art.

Claim 7 specifies a plurality of comparators, each with a different threshold. The rejection apparently alleges that this formation is inherent within the prior art. This contention is respectfully traversed. The prior art never teaches or suggests the automatic monitoring of illumination for this purpose. Nowhere does the prior art teach or suggest a plurality of comparators each with a different threshold, used for part of the resolution control circuit. Therefore, it is respectfully suggested that the rejection is in error.

Claim 9 specifies a counter that counts the states of the different pixels. Again, this is not in any way taught or suggested by the cited prior art. The rejection states that "the matter in which an illumination condition is determined is a matter of design choice". This is based entirely on hindsight, since there is not even an allegation that the subject matter is taught or suggested by the cited prior art.

Similar comments apply for claims 10, 11, 18, and 19. The rejection is entirely based on hindsight since there is not even an allegation that the subject matter is taught or suggested by the cited prior art. In fact, this structure defines a way of forming the automatic resolution control circuit, and is not taught or suggested by the cited prior art.

Claim 12 specifies storing the whole frame, and using that frame to determine the illumination condition of the next frame. Even if Wilder teaches storing a whole frame, he does not teach or suggest using it in this way. It is respectfully suggested, therefore, that the rejection is again based on hindsight and that claims 12 and 13 are allowable.

Claim 15 defines calibrating, which again is not taught or suggested by the prior art.

Claim 16 specifies a double sampling circuit, which may reduce the amount of noise. Therefore, it is respectfully suggested that claim 16 should be even further allowable over the cited prior art.

In view of the above amendments and remarks, therefore, all of the claims should be in condition for allowance. A formal notice to that effect is respectfully solicited respectfully submitted.

Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: 4/16/01

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Attachment: Terminal Disclaimer

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VERSION TO SHOW CHANGES MADE

In the Claims:

Claim 1 has been canceled.

Claims 2, 5, 12, 15, and 16 have been amended as follows.

2. (Amended) [A device as in claim 1,] An adaptive programmable light imaging device, comprising:

an array of active pixel sensor pixels, each pixel producing a signal based only on the received radiation within the pixel;

a plurality of programmable summation kernels, each summation kernel programmable to selectively sum together a number of said pixels from said active pixel sensor; and

a resolution control circuit, producing an output signal which controls a size of said summation kernels between a minimum value kernel size and a maximum value kernel size;

wherein said resolution control circuit monitors a magnitude of a received signal level from pixels, and automatically changes the size of the summation kernels based on said signals from said pixels.

5. (Amended) A device as in claim 3, wherein said illumination condition is judged by a magnitude of said signal from said active pixel sensor[s] pixels.

12. (Amended) [A device as in claim 1] An adaptive programmable light imaging device, comprising:

an array of active pixel sensor pixels, each pixel producing a signal based only on the received radiation within the pixel;

a plurality of programmable summation kernels, each summation kernel programmable to selectively sum together a number of said pixels from said active pixel sensor; and

a resolution control circuit, producing an output signal which controls a size of said summation kernels between a minimum value kernel size and a maximum value kernel size, further comprising a frame memory, for storing an entire frame as a stored frame, and

wherein said resolution control circuit is based on illumination condition in said stored frame, and decreases the kernel size in a subsequent frame for better illumination condition and increases the kernel size in said subsequent frame for poorer illumination condition.

15. (Amended) [A device as in claim 1] An adaptive programmable light imaging device, comprising:

an array of active pixel sensor pixels, each pixel producing a signal based only on the received radiation within the pixel;

a plurality of programmable summation kernels, each summation kernel programmable to selectively sum together a number of said pixels from said active pixel sensor; and

a resolution control circuit, producing an output signal which controls a size of said summation kernels between a minimum value kernel size and a maximum value kernel size,

wherein said active pixel sensor includes a photoreceptor and a buffer transistor and a selection transistor, and

further comprising calibrating the circuit the circuit prior to detecting a desired resolution.

16. (Amended) An adaptive programmable light imaging device, comprising:

an array of active pixel sensor pixels, each pixel having an in-pixel buffer transistor, and in-pixel selection transistor, and a photoreceptor producing a signal based only on the received radiation within the pixel;

a double sampling circuit, operating to eliminate at least one amplifier offset from said signal;

a plurality of programmable summation kernels, each summation kernel programmable to selectively sum together a number of said pixels from said active pixel sensor; and

a resolution control circuit, including an illumination condition detecting part connected to said active pixel sensor pixels and determining the illumination condition therefrom, and producing an output signal which <u>automatically</u> controls a size of said summation kernels between a minimum value kernel size for a maximum illumination condition, and a maximum value kernel size based on a minimum illumination condition.